

# DAVID L. KELLY

## University Address

Department of Economics

University of Miami

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## Research Interests

Environmental economics:

- Optimal climate change policy under uncertainty and learning.
- Design of environmental regulation under uncertainty.
- Economic growth and the environment.
- The effect of government policies on the environment.
- Adaptation to climate change.

Macroeconomics and finance: the effects of learning and uncertainty.

## Teaching Interests

Environmental economics, managerial economics, macroeconomics, monetary economics.

## Experience

May 2012–Present	Professor, Department of Economics, University of Miami.
May 2003–May 2012	Associate Professor, Department of Economics, University of Miami.
August 2005–August 2008	Chair, Department of Economics, University of Miami.
August 1998–December 2002	Assistant Professor, Department of Economics, University of Miami.
July 1996–July 1998	Visiting Assistant Professor, Department of Economics, University of California at Santa Barbara.
May 1995–July 1998	Postdoctoral Researcher, Department of Economics, University of California at Santa Barbara.
July 1996–July 1997	Visiting Assistant Professor, Department of Environmental Science and Management, University of California at Santa Barbara.
August 1994–May 1995	Visiting Assistant Professor of Economics, Graduate School of Industrial Administration, Carnegie Mellon University.

## Degrees

Ph.D., Economics.

Graduate School of Industrial Administration, Carnegie Mellon University, 1995.

M.S., Economics.

Graduate School of Industrial Administration, Carnegie Mellon University, 1991.

B.S., Honors in Mathematical Economics.

Wake Forest University, 1989.

## Research

### Publications

Fitzpatrick, Luke, and David L. Kelly, "Probabilistic Stabilization Targets," *Journal of the Association of Environmental and Resource Economists*, 4(3):611-657 (June 2017).

Boleslavsky, Raphael, David L. Kelly and Curtis R. Taylor, "Selloffs, Bailouts, and Feedback: Can Asset Markets Inform Policy," *Journal of Economic Theory*, 169:294-343 (May 2017).

Heutel, G. and David L. Kelly, "Incidence and Environmental Effects of Distortionary Subsidies", *Journal of the Association of Environmental and Resource Economists*, 3(2):361-415 (June 2016).

M. Burke, M. Craxton, C. D. Kolstad, C. Onda, H. Allcott, E. Baker, L. Barrage, R. Carson, K. Gillingham, J. Graff-Zivin, M. Greenstone, S. Hallegatte, W. M. Hanemann, G. Heal, S. Hsiang, B. Jones, David L. Kelly, R. Kopp, M. Kotchen, R. Mendelsohn, K. Meng, G. Metcalf, J. Moreno-Cruz, R. Pindyck, S. Rose, I. Rudik, J. Stock, R. S. J. Tol, "Opportunities for Advances in Climate Change Economics," *Science*, 352(6283):292-293 (15 April 2016).

David L. Kelly and Zhuo Tan, "Learning and Climate Feedbacks: Optimal Climate Insurance and Fat Tails", *Journal of Environmental Economics and Management*, 72:98-122 (2015).

Boleslavsky, R. and David L. Kelly, "Dynamic Regulation Without Payments: The Importance of Timing," *Journal of Public Economics*, 120:169-80 (December 2014).

Bossi, L., Pere Gomis-Porqueras, and David L. Kelly, "Optimal Second Best Taxation of Addictive Goods," *B.E. Journal of Macroeconomics (Advances)*, 14(1):75-118 (2014).

Bajona, C. and David L. Kelly, "Trade and the Environment With Pre-existing Subsidies: A Dynamic General Equilibrium Analysis," *Journal of Environmental Economics and Management*, 64(2):253-78 (2012).

Kelly, David L., David Letson, Forrest Nelson, David Nolan, and Daniel Solís, "Evolution of Subjective Hurricane Risk Perceptions: A Bayesian Approach," *Journal of Economic Behavior and Organization*, 81(2):644-63 (2012).

Bartz, Sherry and David L. Kelly, "Economic Growth and the Environment: Theory and Facts," *Resource and Energy Economics*, 30:115-49 (2008).

- Kelly, David L. and Stephen F. LeRoy, "Liquidity and Liquidation," *Economic Theory*, 31(3):553-572 (2007).
- Kelly, David L., "Price and Quantity Regulation in General Equilibrium," *Journal of Economic Theory*, 125(1):36-60 (2005).
- Kelly, David L., Charles D. Kolstad, and Glenn T. Mitchell, "Adjustment Costs from Environmental Change," *Journal of Environmental Economics and Management*, 50(3):468-95 (2005).
- Kelly, David L. and Stephen F. LeRoy, "Liquidity and Fire Sales," in Jon Faust, Athanasios Orphanides and David Reifschneider, eds., *Models and Monetary Policy: Research in Tradition of Dale Henderson, Richard Porter, and Peter Tinsley*, Board of Governors of the Federal Reserve System, 249-70 (2005).
- Kelly, David L. and Douglas G. Steigerwald, "Private Information and High Frequency Stochastic Volatility," *Studies in Non-linear Dynamics and Econometrics*, 8(1):1-28 (2004). Lead article.
- Kelly, David L., "On Environmental Kuznets Curves Arising From Stock Externalities," *Journal of Economic Dynamics and Control*, 27(8):1367-90 (2003).
- Kelly, David L. and Charles D. Kolstad, "Solving Infinite Horizon Growth Models With an Environmental Sector," *Computational Economics*, 18:217-23 (2001).
- Kelly, David L. and Charles D. Kolstad, "Malthus and Climate: Betting on a Stable Population," *Journal of Environmental Economics and Management*, 41:135-161 (2001). Lead Article.
- Kelly, David L. and Jamsheed Shorish, "Stability of Functional Rational Expectations Equilibria," *Journal of Economic Theory*, 95(2):215-250 (2000).
- Kelly, David L. and Charles D. Kolstad, "Bayesian Learning, Pollution, and Growth," *Journal of Economic Dynamics and Control*, 23(4):491-518 (1999). Lead Article.
- Kelly, David L. and Charles D. Kolstad, "Integrated Assessment Models for Climate Change Control," in Henk Folmer and Tom Tietenberg, eds., *International Yearbook of Environmental and Resource Economics 1999/2000: A Survey of Current Issues*, Cheltenham, UK: Edward Elgar (1999).
- Goenka, Aditya, David L. Kelly, and Stephen E. Spear, "Endogenous Strategic Business Cycles," *Journal of Economic Theory*, 81(1):97-125 (1998).
- Kelly, David L. and Charles D. Kolstad, "The Role of Population Growth in Controlling Greenhouse Gas Emissions," in *Energy and Economic Growth: Is Sustainable Growth Possible?*, proceedings of the 20th Annual International Conference, Volume 1, pp. 52-65 (1997).
- Kelly, David L. and Charles D. Kolstad, "The Climate Change Footprint: Will We See it Before it is Upon Us?," in Nakicenovic, N., W.D. Nordhaus, R. Richels, F.L. Toth, eds., *Climate Change: Integrating Science, Economics and Policy*, WP-96-135, International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria (1996).

**Book Reviews**

Kelly, David L., "The United States in a Warming World: The Political Economy of Government, Business, and Public Responses to Climate Change," *Journal of Economic Literature*, 53(3):685-87 (2015).

Kelly, David L., "Capitalism, Socialism, and the Environment," *Nature and Culture*, 8(2):226-236 (Summer 2013).

Kelly, David L., "Review: Plowshares and Pork Barrels: The Political Economy of Agriculture," *Bulletin of Marine Science*, 79(2):425-7 (September 2006).

**Other Publications**

McCullough, Michael and David L. Kelly, "Reproducibility: A Trading Scheme to Reduce False Results," *Nature*, 508:319 (April 17, 2014).

**Working Papers**

Conte, Marc N. and David L. Kelly, 2016, "An Imperfect Storm: Fat-Tailed Hurricane Damages, Insurance, and Climate Policy," University of Miami Working Paper. Under review.

David L. Kelly, "Subsidies to Industry and the Environment," National Bureau of Economic Research working paper 14999, May 2009.

David L. Kelly, "Unit Roots in the Climate: Is the Recent Warming Due to Persistent Shocks?," University of Miami Working paper (2000).

Natalia G. Andronova, David L. Kelly, Charles D. Kolstad, and Michael Schlesinger, "Learning About Climate Sensitivity From the Instrumental Temperature Record," University of Miami Working paper (1998).

**Funded Research**

- 2011 University of Miami Provost's Research Award: "Dynamic Regulation Without Payments: Timing is Everything."
- 2010 US Department of Education Center for Competitiveness of US Services for Prosperity and Sustainability: (CIBER) "International Environmental Sustainability and Security Services." "Incidence of Bailouts and Subsidies" and "The Impact of Reduced Trade Barriers on the Environment."
- 2006 University of Miami School of Business Grant "Hurricane Event Markets." Co-Pi's: David L. Kelly, David Letson, and David Nolan.
- 2005 Center for Ecosystems Science and Policy Faculty Seed Grant "Hurricane Event Markets." Co-Pi's: David L. Kelly, David Letson, and David Nolan.
- 2002 James W. McLamore Summer Award "Adjustment Costs, Incomplete Information, and Learning."
- 2001 James W. McLamore Summer Award "Dynamic Differences in Price and Quantity Regulation."

- 1999 James W. McLamore Summer Award “Stochastic Volatility and Asset Prices.”
- 1996-7 DOE research grant Uncertainty and learning about damages from climate change (with Charles Kolstad).
- 1996-7 USDA research grant Climate change impacts on US agriculture (with Charles Kolstad and David Schimmelpfennig).

#### Awards

Excellence in Research Award, University of Miami School of Business, August 19, 2000.

William Larimer Mellon Fellowship, 1989-1992.

#### Refereed Conferences and Invited Seminars

- 2017 Association for Environmental and Resource Economists (AERE) Summer Conference: “Distortionary Taxation and Climate Policy in a Regional Model of Climate and the Economy”
- 2016 Invited Seminar, Maastricht University: “An Imperfect Storm: FEMA, Private Hurricane Insurers, and Climate Change”
- 2016 Association for Environmental and Resource Economists (AERE) Summer Conference: “Optimal Experimentation with Geo-engineering”
- 2015 Conference on the Research Frontiers in the Economics of Climate Change, Stanford University: “Learning and Uncertainty in Climate Change Economics: What Have we Learned and What is Uncertain?” October 9, 2015.
- 2015 Association for Environmental and Resource Economists (AERE) Summer Conference: “Learning, Fat-Tailed Uncertainty and Irreversible Green Capital Investment.”
- 2015 Association for Environmental and Resource Economists (AERE) Summer Conference: “An Imperfect Storm: FEMA, Insurance, and Climate Change.”
- 2015 Invited Seminar: Georgia State University, “An Imperfect Storm: How FEMA, Private Hurricane Insurers, and Climate Change Can Create Inefficient Coastal Housing Markets and Impose a Burden on Inland Taxpayers,” February 24, 2015.
- 2015 Annual Meeting of the American Economics Association: “An Imperfect Storm: How FEMA, Private Hurricane Insurers, and Climate Change Can Create Inefficient Coastal Housing Markets and Impose a Burden on Inland Taxpayers,” January 3, 2015.
- 2014 Invited Seminar: University of California at Davis, “The Welfare Cost of Stabilization Targets,” April 18, 2014.
- 2014 Invited Seminar: University of California at Berkeley, “The Welfare Cost of Stabilization Targets,” April 16, 2014.
- 2013 Invited Seminar: Fordham University, “The Welfare Cost of Stabilization Targets,” November 5, 2013.
- 2013 Fourteenth Occasional Workshop on Environmental and Resource Economics “Optimal Probabilistic Stabilization Targets,” September 13, 2013.

- 2013 Invited Seminar, University of Arizona: “Dynamic Regulation Design Without Payments: Timing is Everything,” February 27, 2013.
- 2012 Association for Environmental and Resource Economists (AERE) Summer Conference: “Learning, Growth, and the Climate: Does the Fat Tail Wag the Dog?,” June 4, 2012.
- 2012 Invited Seminar, University of Stavanger: “Learning, Growth, and the Climate: Does the Fat Tail Wag the Dog?,” May 16, 2012.
- 2012 Invited Seminar, Notre Dame: “Learning, Growth, and the Climate: Does the Fat Tail Wag the Dog?,” April 27, 2012.
- 2012 Thirteenth Occasional Workshop on Environmental and Resource Economics “Learning, Growth, and the Climate: Does the Fat Tail Wag the Dog?,” February 24, 2012.
- 2011 Association for Environmental and Resource Economists (AERE) Summer Conference: “Dynamic Regulation Design Without Payments: Timing is Everything,” June 9, 2011.
- 2009 Conference on Uncertainty and Learning in the Management of Environmental and Resource Economics, University of California at Santa Barbara, “Evolution of Subjective Hurricane Risk Perceptions: A Bayesian Approach,” December 3, 2009.
- 2009 Eleventh Occasional Workshop on Environmental and Resource Economics, University of California at Santa Barbara, “Evolution of Subjective Hurricane Risk Perceptions: A Bayesian Approach,” October 10, 2009.
- 2009 Latin American Meetings of the Econometric Society, “Optimal Second Best Taxation of Addictive Goods in Dynamic General Equilibrium,” October 2, 2009.
- 2008 Invited Seminar, University of Pennsylvania (Wharton Center for Risk Management): “Evolution of Subjective Hurricane Risk Perceptions: A Bayesian Approach,” January 31, 2008.
- 2007 Invited seminar, Concordia University: “Subsidies to Industry and the Environment,” October 19, 2007.
- 2007 Invited seminar, Ryerson University: “Subsidies to Industry and the Environment,” October 18, 2007.
- 2007 National Bureau of Economic Research Summer Institute, “Subsidies to Industry and the Environment,” July 23, 2007.
- 2006 Ninth Occasional California Workshop on Environmental and Natural Resource Economics: “Subsidies to Industry and the Environment,” November 3, 2006.
- 2006 Invited Seminar, University of Florida (Tropical Research and Education Center): “Subsidies to Industry and the Environment,” October 19, 2006.
- 2006 Invited Seminar, Carnegie Mellon University: “Subsidies to Industry and the Environment,” October 6, 2006.
- 2006 National Bureau of Economic Research Summer Institute Research Sketches: “Free Trade and the Environment With Pre-Existing Subsidies,” July 27, 2006.
- 2006 Invited seminar, University of Calgary: “Free Trade and the Environment With Pre-Existing Subsidies,” February 17, 2006.

- 2005 Eighth Occasional California Workshop on Environmental and Natural Resource Economics, "Free Trade and the Environment With Pre-Existing Subsidies," October 29, 2005.
- 2004 Invited seminar, McGill University: "Voluntary Over-Compliance With Firms as Quasi-Governmental Institutions," March 26, 2004.
- 2004 Invited seminar, University of Montreal HEC: "Economic Growth and the Environment: Theory and Facts," March 25, 2004.
- 2003 Invited seminar, University of Central Florida: "Economic Growth and the Environment: Theory and Facts," 2003.
- 2001 Sixth Occasional California Workshop on Environmental and Natural Resource Economics: "Price and Quantity Regulation in Dynamic General Equilibrium," October 26, 2001.
- 2001 National Bureau of Economic Research Summer Institute: "Price and Quantity Regulation in Dynamic General Equilibrium," July 31, 2001.
- 1999 Invited seminar, University of Texas: "On Kuznets Curves Arising From Stock Externalities," March 12, 1999.
- 1998 Invited seminar, Florida International University: "On Kuznets Curves Arising From Stock Externalities," October 2, 1998.
- 1998 International Energy Workshop: "On Climate Change and Economic Growth," Stanford University, June 16, 1998.
- 1998 Invited seminar, University of Aarhus: "An Economic Model of Conditional Heteroskedasticity," June, 1998.
- 1998 Energy Modeling Forum Conference: "Integrated Assessment With Endogenous Technical Change and Sustained Growth," June 1998.
- 1998 Invited seminar, University of Miami: "On Kuznets Curves Arising From Stock Externalities," February 1998.
- 1998 Invited seminar, University of Tennessee: "On Kuznets Curves Arising From Stock Externalities," February 1998.
- 1998 Invited seminar, North Carolina State University: "On Kuznets Curves Arising From Stock Externalities," February 1998.
- 1998 Econometric Society meetings: "An Economic Model of Conditional Heteroskedasticity," January 4, 1998.
- 1997 Invited seminar, University of Wyoming: "Bayesian Learning, Growth, and Pollution," spring 1997.
- 1997 Invited seminar, Electric Power Research Institute: "Bayesian Learning, Growth, and Pollution," spring 1997.
- 1997 Invited seminar, University of California at Santa Barbara: "On Kuznets Curves Arising From Stock Externalities," Fall 1997.
- 1996 Workshop on Environmental and Natural Resource Economics, University of California at Santa Barbara: "Malthus and Climate: Betting on a Stable Population," May 16, 1996.

- 1996 Invited seminar, University of California at Santa Barbara: “Bayesian Learning, Growth, and Pollution,” Fall 1996.
- 1995 Invited seminar, Federal Reserve Bank of St. Louis: “Learning to be Rational Using Neural Networks,” spring 1995.
- 1995 Invited seminar, Lehman Brothers: “Valuing and Hedging American Put Options Using Neural Networks,” spring 1995.
- 1994 Neural Networks in the Capital Markets Conference, Caltech University, “Valuing and Hedging American Put Options Using Neural Networks,” November 17, 1994.
- 1994 Invited seminar, Queens University: “Learning to be Rational Using Neural Networks,” spring 1994.
- 1994 Invited seminar, Board of Governors of the Federal Reserve: “Learning to be Rational Using Neural Networks,” Fall 1994.
- 1994 Invited seminar, George Mason University: “Learning to be Rational Using Neural Networks,” spring 1994.
- 1993 Richard Cyert Honorary Conference, Carnegie Mellon University, “Stability of Functional Rational Expectations Equilibria” Sept. 11, 1993.
- 1993 Invited seminar, Carnegie Mellon University: “Learning to be Rational Using Neural Networks,” Fall 1993.

## Professional Activities

### Discussant

- Panel Discussant, “Stochasticity, Uncertainty, Information, and Learning,” Conference on the Research Frontiers in the Economics of Climate Change, Stanford University, October 9, 2015.
- Discussant, “Competitive Intergenerational Altruism,” Fourteenth Occasional Workshop on Environmental and Resource Economics, September 12, 2013.
- Discussant, “Carbon Prices for the Next Thousand Years,” National Bureau of Economic Research Summer Institute, July 24, 2012.
- Discussant, “Bayesian Econometrics: Past, Present, and Future,” Conference on Uncertainty and Learning in the Management of Environmental and Resource Economics, University of California at Santa Barbara, December 3, 2009.
- Panel Discussant, *Models and Monetary Policy: Research in the Tradition of Dale Henderson, Richard Porter, and Peter Tinsley*, Board of Governors of the Federal Reserve, March 28, 2004.
- Discussant, National Bureau of Economic Research Summer Institute; August 3, 1998.

**Editorial Activities**

Program committee, Association for Environmental and Resource Economics Summer Conference, May 31-June 2, 2017.

Program committee, Association for Environmental and Resource Economics Summer Conference, June 9-11, 2016.

Program committee, Association for Environmental and Resource Economics Summer Conference, June 3-5, 2015.

Program committee, Association for Environmental and Resource Economics Summer Conference, June 6-8, 2013.

Program committee, Association for Environmental and Resource Economics Summer Conference, June 3-5, 2012.

Program committee, Association for Environmental and Resource Economics Summer Conference, June 9-10, 2011.

Referee for *American Economic Journal: Economic Policy*, *American Economic Journal: Macroeconomics*, *American Economic Review*, *Agricultural Economics*, *BE Journals in Economic Analysis and Policy*, *BE Journals in Macroeconomics*, *BE Journals in Theoretical Economics*, *Canadian Journal of Agricultural Economics*, *Climate Change Economics*, *Climate Change Letters*, *Climate Policy*, *Climatic Change*, *Contemporary Economic Policy*, *Ecological Economics*, *Economics Bulletin*, *Economic Journal*, *Economic Theory*, *Economics Letters*, *Energy Journal*, *Energy Policy*, *Environmental and Ecological Statistics*, *Environmental Research and Public Health*, *Environmental and Resource Economics*, *European Economic Review*, *Geophysical Research Letters*, *Global Environmental Change*, *Human and Ecological Risk Assessment*, *International Economic Review*, *Journal of Agricultural and Resource Economics*, *Journal of the Association of Environmental and Resource Economists*, *Journal of Economic Behavior and Organization*, *Journal of Economic Dynamics and Control*, *Journal of Economic Theory*, *Journal of Environmental Economics and Management*, *Journal of Environmental Management*, *Journal of the European Economics Association*, *Journal of Policy Reform*, *Journal of Population Economics*, *Journal of Public Economics*, *Journal of the Royal Society Interface*, *Macroeconomic Dynamics*, *Natural Hazards Review*, *Nature Climate Change*, *Optimal Control Applications and Methods*, *Resource and Energy Economics*, *Review of Economic Dynamics*, *Review of Economic Studies*, *Southern Economic Journal*, *Weather, Economics, and Society*, and grants for the National Oceanic and Atmospheric Administration and the National Science Foundation.

**Dissertation Supervision**

Dissertations Supervised: Luke Fitzpatrick, Zhuo Tan, Sherry Bartz, Augustine Nelson.

Dissertation committees: Aijun Besio, Jiangze Bian, Lygia Lobo, Ana Maria Vallina, Yue Xue, Ayeisha Brinson, Zhigang Feng, Liang Zhao.

## Teaching

### Teaching Experience

**Managerial Economics** (Eco 685) Department of Economics, University of Miami, spring 2005, fall 2012, fall 2013, fall 2014, fall 2015, fall 2016. MBA level course.

**Environmental Economics** (Eco 345) Department of Economics, University of Miami, fall 2009, fall 2010, fall 2011. Undergraduate elective course.

**Graduate Macroeconomic Theory** (Eco 521, 621, 603) Department of Economics, University of Miami, fall 1998, spring 1999, fall 1999, fall 2000, spring 2001, fall 2001, fall 2002, spring 2003, fall 2004, spring 2005, fall 2005, fall 2006, spring 2007, fall 2009, spring 2009, spring 2010, fall 2010, spring 2011, fall 2011, spring 2012, fall 2012, spring 2013, spring 2014, fall 2015, fall 2016. Ph. D. level courses.

**Monetary Economics** (Eco 403) at Department of Economics, University of Miami, fall 1999, fall 2000, fall 2001, fall 2002, fall 2004, fall 2007, spring 2008, spring 2010, spring 2011, spring 2012 and Carnegie Mellon University spring 1995. Undergraduate elective course.

**Principles of Macroeconomics** (Eco 212) at University of Miami, spring 1999, spring 2000, spring 2001, and spring 2002, spring 2003, spring 2006, summer 2010, summer 2011, summer 2012. Undergraduate course.

**Managerial Economics** (Eco 691) Department of Economics, University of Miami, spring 2004. MBA level course.

**Macroeconomics** (Econ 204B) at Department of Economics, University of California Santa Barbara, spring 1997, 1998. Ph. D. level course.

**Environmental Cost-Benefit Analysis** (ESM 245) at Department of Environmental Science and Management, University of California Santa Barbara, Winter 1996. Masters level elective course.

**Environmental Management and Regulation** (ESM 204) at Department of Environmental Science and Management, University of California Santa Barbara, fall 1996. Masters level required course in Environmental Economics.

**Graduate Seminar in Environmental Economics** (Econ 594ER) at Department of Economics, University of California Santa Barbara, 1996. Seminar Ph. D. level course.

**Public Finance** at Graduate School of Industrial Administration, Carnegie Mellon University, spring 1995. Undergraduate elective course.

**Advanced Economic Analysis IV** at Graduate School of Industrial Administration, Carnegie Mellon University, spring 1994. Course in computational macroeconomics. Ph.D. level course taught with other GSIA faculty.

**Macroeconomics** at Graduate School of Industrial Administration, Carnegie Mellon University, fall 1994, Summer term 1993, Summer term 1992, Summer term 1991. Course in macroeconomics with emphasis on international issues for advanced undergraduates.

## Service

### Service

Chair, Department of Economics, University of Miami, 2006-8.

Director of Graduate Studies, Department of Economics, University of Miami, 1999-2006, 2008-present.

Member of Graduate Faculty, University of Miami, 1998-present.